

SECTION I

The Department of Motor Vehicles maintains an ongoing interest in the quality and effectiveness of various driver education and training systems. The department provides advise to the State Board of Education and other school boards, establishes standards for accrediting private driving schools and develops curriculum standards for licensing mature-driver programs. Finally, the Department plays a direct role in educating drivers through various handbooks, manuals and brochures used by applicants in preparing for the driver license examination.

TITLE: An Evaluation of Waiving the Driving Tests for Selected Graduates of Driver Training

AUTHOR(S): David M. Harrington

DATE: June 1970

FUNDING SOURCE: Departmental Budget

REPORT NUMBER: 35

NTIS NUMBER: PB-218852

PROJECT OBJECTIVE:

To determine if it was plausible, without a reduction in screening quality, to permit the schools to certify students as meeting the requirements for a driver's license instead of requiring a driving test administered by DMV.

SUMMARY:

A pilot study was done to determine the feasibility of waiving the driving test portion of the Department of Motor Vehicles' (DMV) licensing procedures for selected graduates of courses in driver training. The pass rate for all students in the four school districts studied, on their first attempt at the driving test, was 73%. The driver training instructors were asked to nominate the top 10% of their behind-the-wheel students, relative to their ability to pass DMV's driving test. A follow-up was done to determine how well this top 10% actually did on their first driving test. Their pass rate was 85% which, although considerably better than that for all students, was considered too low to permit substituting the driver training instructor's judgment in lieu of the DMV's driving test. One limitation of the study was absence of test reliability indices needed to adjust for attenuation.

IMPLEMENTATION STATUS OF FINDINGS AND RECOMMENDATIONS:

It was recommended that the concept not be implemented. This recommendation was accepted by management.

SUPPLEMENTARY INFORMATION:

None.

TITLE: California Driver Training Evaluation Study (Assembly Bill 1486, Veysey)

AUTHOR(S): Margaret Hubbard Jones,
UCLA

DATE: December 1973

REPORT NUMBER: Unnumbered

FUNDING SOURCE: Special Senate
Appropriation to DMV; subcontract to
University of California Los Angeles
(Ronald S. Coppin, project administrator)

NTIS NUMBER: PB-226645/AS

PROJECT OBJECTIVE:

The California Driver Training Evaluation Study was established by Assembly Bill (AB) 1486 (1969 General Session, Veysey) for the purpose of comparing benefits and costs of behind-the-wheel driver training, as given in California high schools by certified high school teachers, with that given by licensed commercial driving school instructors. Additionally, the bill specified a comparison of the standard six-hour training, or its legal simulator-assisted substitute (short training program) with an enriched program providing four extra hours behind-the-wheel (long training program).

SUMMARY:

Twelve thousand high school students were randomly selected and assigned to programs for training by public high school or commercial school instructors in long or short training courses. All schools had been first selected at random. Overall, males tested better in all training variables except those measuring attitudes; their subsequent accident and citation records were worse than the females. Fewer females were licensed, and they required longer to achieve this licensing. Overall licensing rate was low (47% at 6 months and 73% at 2 years). Commercially trained students tested somewhat better on most training variables and scored higher on the DMV road test; they showed no difference in accident rate and a very small increase in citations over public school students.

There was no consistent relationship between course length and subsequent driving record. Commercial training saved approximately \$20 per student. Students trained in the long programs tested higher on training variables and DMV road tests and were licensed sooner. There was no significant difference in subsequent accident or citation rates, although the public school males tended to have slightly fewer convictions ($p > .10$). Short programs saved \$16 (commercial) or \$36 (public) per student. There appeared to be no significant differences between standard simulator and standard six-hour in-car programs. Short simulator courses were consistently worse than all other programs. Very few students reported practice either during or after training, and little use was made of student observation time in the car. Significant differences in teaching techniques were found on all variables; monitoring of the actual training procedures revealed significant differences between public and commercial instructors, short and long sessions, urban and suburban districts, simulator program and six car hours, and male and female students. Public training was significantly more often found in residential areas and light traffic conditions. Students in urban districts and

students who had short lessons were also more likely to be trained in residential areas and under light traffic. Females similarly were more likely to be trained in residential areas and light traffic. Females were both rated lower in performance and given poorer training.

IMPLEMENTATION STATUS OF FINDINGS AND RECOMMENDATIONS:

1975 AB 1588, Chapter 1015 (Hart) provided that school districts may contract out to private firms to provide driving instruction should they so desire. 1977 AB 2050, Chapter 358 (Dannemeyer) altered this legislation to increase the maximum reimbursable amount per student under this plan. Unsuccessful legislation was authored by Senator Montoya (1979, SB 155) to allow DMV to issue vouchers to eligible students. The vouchers would have been good for a training course at a certified licensed driving school, which would redeem the vouchers through the State Superintendent of Public Schools.

SUPPLEMENTARY INFORMATION:

A summary of the report "The Long Term Implication of the California Driver Training Evaluation study" by Jones was published in *Journal of Traffic Safety Education* 21(3), 11-12 & 26.

A critique of the report by Walter Patterson was published in the January, 1975 issue of *Journal of Traffic Safety Education* and answered by Margaret Jones and Ron Coppin in the July issue.

In September of 1974, Leon G. Goldstein was commissioned by a volunteer organization called "The California Committee for Traffic Safety Education" to prepare a critique of the study. It was published in the April, 1975 edition of the *Journal of Traffic Safety Education*. A rebuttal by Raymond C. Peck and Margaret Jones was published in the October issue of *Journal of Traffic Safety Education*. Goldstein published a rejoinder to this rebuttal, also in the October, 1975 issue of the journal.

Based on a review of the issues, the California Committee for Traffic Safety Education concluded that the findings of the original study were valid (letter published in *Journal of Traffic Safety Education*, October, 1975). The Department established a committee to better coordinate the traffic safety education efforts of DMV and the driver training community. The initial committee held one meeting and was subsequently disbanded. However, a new committee involving departmental and driver education representatives was formed in 1996.

TITLE: Defensive Driving as a Prerequisite for Licensing (Assembly Concurrent Resolution 94, Deddeh)

AUTHOR(S): California DMV

DATE: January 1974

FUNDING SOURCE: Departmental Budget

REPORT NUMBER: Unnumbered

NTIS NUMBER: PB-267864/AS

PROJECT OBJECTIVE:

To comply with a legislative resolution requesting DMV to conduct a study relating to the desirability of making completion of a course in defensive driving a requirement for persons seeking to obtain a California driver's license.

SUMMARY:

The study found that New York required a three-hour defensive driving course for first-time licensees unless they had a driver education course or a previous license from another state. In a New York study, these drivers showed a 36% decrease in accidents after this requirement was implemented, but serious methodological limitations make the findings questionable. Unlike the New York first-time licensee population, the vast majority of original California applicants at that time had either had driver education (64%) or had been previously licensed; e.g., in another state (16%). Therefore it was not considered cost-beneficial to try to implement such a program, since it would affect such a small (20% and shrinking) segment of original California applicants. Furthermore, a knowledge of laws and driving skill was required in order to pass California's written and road tests. Finally, there were no conclusive data substantiating reduction of accident rates through short defensive driving classes, and the cost-benefit of such requirements was questionable.

IMPLEMENTATION STATUS OF FINDINGS AND RECOMMENDATIONS:

No legislation establishing such a program or requirement was enacted.

SUPPLEMENTARY INFORMATION:

None.

TITLE: The Effects of Range vs. Non-Range Driver Training on the Accident and Conviction Frequencies of Young Drivers

AUTHOR(S): Dell R. Dreyer &
Mary K. Janke

DATE: May 1977

REPORT NUMBER: 58

FUNDING SOURCE: Contract with San Juan
Unified School District

NTIS NUMBER: PB-272840/AS

PROJECT OBJECTIVE:

The purpose of this study was to compare the relative effectiveness of a driving range vs. non-range driver education program in increasing skill and reducing accidents and convictions among teenage drivers.

SUMMARY:

The sample consisted of 2,057 students from five California high schools who were assigned randomly either to a traditional driver training program ($N = 918$) or to an experimental program utilizing a driving range ($N = 1,139$).

The traditional program included 12 hours in the simulator and 12 hours on the road (three behind-the-wheel, nine observation). The experimental program had ten hours in the simulator, eight hours on an off-street driving range, and six hours on the road

(two behind the wheel, four observation). Each program was preceded by 45 hours of classroom driver education, for a total of 69 hours for each program.

Aspects of performance during driver training were measured, as well as performance on tests required for driver licensing and the number of days between training and licensing. In addition, Department of Motor Vehicles files supplied information on subjects' accident and conviction records within the year following the beginning of driver training. Results showed that nonrange students performed significantly better on the following training variables: knowledge posttest ($p<.01$), simulator score ($p<.01$), and driver course grade ($p<.05$). There were no significant differences between range and non-range students on driver licensing test scores or in the amount of time spent in becoming licensed. However, range students had fewer total accidents than non-range students ($p<.05$) in the year following the beginning of training. Time spent on the range during training was not related to frequency of accidents or convictions for range students. Cost-benefit aspects of range training were discussed. It was pointed out that range training is operationally less expensive than traditional training, but costs of constructing a driving range may vary appreciably.

IMPLEMENTATION STATUS OF FINDINGS AND RECOMMENDATIONS:

No expansion of range training resulted, possibly because of the costs involved.

SUPPLEMENTARY INFORMATION:

Published in *Accident Analysis and Prevention*, 11(3), 1979.

TITLE: The Effectiveness of Traffic Safety Material in Influencing the Driving Performance of the General Driving Population

AUTHOR(S): James W. Anderson

DATE: June 1977

FUNDING SOURCE: Federal Highway
Administration

REPORT NUMBER: 57

NTIS NUMBER: PB-278168/AS

PROJECT OBJECTIVE:

To develop new traffic safety materials, tailoring some to the age and sex of the recipient; to determine if mailing such materials to California drivers would reduce subsequent accidents and convictions.

SUMMARY:

Results indicated that the materials were not effective in reducing subsequent six-month accident and conviction frequencies. In addition, the results indicated that neither the topic nor the tailoring of the material had any effect on subsequent driving record. Lastly, age and sex of the recipient did not influence the effect of the material on subsequent driving record.

IMPLEMENTATION STATUS OF FINDINGS AND RECOMMENDATIONS:

The report recommended that a safety program consisting of the mailing of these or similar pamphlets not be implemented by the Department. This recommendation was accepted by departmental management.

SUPPLEMENTARY INFORMATION:

Published in *Accident Analysis and Prevention*, 10, 1978.

TITLE: IIHS Study on Driver Education: Fact or Fiction?

AUTHOR(S): Raymond C. Peck

DATE: July 1978

FUNDING SOURCE: Departmental Budget

REPORT NUMBER: Unnumbered

NTIS NUMBER: None.

PROJECT OBJECTIVE:

To point out some critical limitations of the Insurance Institute for Highway Safety's study on driver training.

SUMMARY:

This paper is a summary and critical analysis of an evaluation on driver training performed by the Insurance Institute for Highway Safety (IIHS). The IIHS study (Robertson & Zador, 1978) consisted of a correlational analysis of the relationship between percentage of teenagers receiving behind-the-wheel driver training, proportion of teenaged population licensed prior to age 18, and teenage fatal accident rate in 27 states. The study found no evidence of accident reduction due to driver training but found that states who trained more students had much higher teenage licensing rates. IIHS concluded that driver training was causing 2,000 fatal accidents per year by increasing the number of teenaged drivers. This paper identifies some critical defects in the Institute's reasoning and methodology. It is pointed out that the existence of correlation does not prove causality and that nonrecursive relationships could account for much of the relationship. That is, states with historically higher teenage licensing rates might be more apt to develop larger driver training programs and train more teenagers. The type of statistical analysis employed by the Institute is not able to cope with situations where the direction of causality can go either way (non-recursive). As a result of this and other defects, the IIHS conclusions are vulnerable to serious challenge.

IMPLEMENTATION STATUS OF FINDINGS AND RECOMMENDATIONS:

Not applicable.

SUPPLEMENTARY INFORMATION:

This paper was presented at the 26th Annual Conference of the California Association for Safety Education, Long Beach, California, April 30, 1978. It was subsequently published in the *Journal of Traffic Safety Education*, 24(4), 14-16, July, 1978.

TITLE: Annual Tabulations of Mature Driver Program Driving Record Comparisons (1989-1993). Annual Report to the Legislature of the State of California.

AUTHOR(S): Lee Stylos &
Mary K. Janke

DATE: June 1989
REPORT NUMBER: 119
NTIS NUMBER: None

AUTHOR(S): Eric Berube &
Robert A. Hagge

DATE: June 1990
REPORT NUMBER: 125
NTIS NUMBER: PB92-101575

AUTHOR(S): Kevin K. Foster

DATE: June 1991
REPORT NUMBER: 130
NTIS NUMBER: PB92-101591

AUTHOR(S): Eric Berube

DATE: June 1992
REPORT NUMBER: 136
NTIS NUMBER: PB93-176352

AUTHOR(S): Eric Berube

DATE: June 1993
REPORT NUMBER: 140
NTIS NUMBER:

FUNDING SOURCE: Departmental Budget

PROJECT OBJECTIVE:

To provide annual tabulations comparing the accident and conviction records of Mature Driver Improvement (MDI) course participants and of a randomly selected group of drivers of similar age (55 and above).

SUMMARY:

Each annual report was designed to assess (1) the relationship between MDI course attendance and subsequent accidents and convictions and (2) the actuarial validity of providing auto insurance premium reductions to MDI course graduates.

Report #1 Driver record comparisons were made between 40,399 MDI course graduates and 75,604 randomly selected comparison drivers aged 55 or older who had not taken an MDI course (1988 subjects). The study found MDI graduates to have significantly lower unadjusted and statistically adjusted (for relevant covariates) rates of fatal/injury accidents and total convictions during the first 6 months following course completion. It was concluded that the program may have contributed to a reduction in accident and conviction rates, but it was believed that the rate differentials were more likely due to subjects' selecting themselves into the program (volunteers presumably being safer drivers). It was recommended that graduates of the MDI program continue to receive auto insurance premium reductions commensurate with the actuarial casualty-accident rate differential.

Report #2 Follow-up comparisons of an additional 12 months of driver record data (7-18 months from reference date) were made for the 1988 subjects. Comparisons were also made on the 6-month subsequent driver records of an additional 45,520 MDI graduates and 75,034 randomly selected comparison drivers (1989 subjects). No significant differences in casualty-accident rates were detected for either the 1988 or 1989 cohorts. These findings were inconsistent with the findings of the first report (although both reports showed MDI graduates to have significantly lower adjusted and unadjusted rates of total convictions). It was recommended that any judgements concerning insurance premium reductions for MDI graduates be withheld until the findings of the third annual report became available.

Report #3 Follow-up comparisons were made for the 1988 subjects on an additional 12 months of driver record data (19-30 months from reference date), and for the 1989 subjects on an additional 12 months of driver record data (7-12 months from reference date). Comparisons were also made on the 6-month subsequent driving records of an additional 36,075 MDI graduates and 65,620 randomly selected comparison drivers (1990 subjects). No significant differences were found for either adjusted or unadjusted casualty accident rates for either the 1988 or 1990 cohorts. For the 1989 cohort, the MDI graduates and the comparison group were not significantly different on subsequent adjusted accident rates, but the graduates had a significantly lower unadjusted rate. All three MDI graduate groups had significantly lower adjusted and unadjusted total conviction rates than did their corresponding comparison groups. It was concluded that there was some evidence of a lower actuarial casualty-accident risk for course graduates, supporting continuing auto insurance premium reductions for MDI graduates. However, there was no compelling evidence that program participation was associated with a reduced accident rate.

IMPLEMENTATION STATUS OF FINDINGS AND RECOMMENDATIONS:

The MDI program, including the offering of insurance reductions to course graduates, is continuing at the time of writing. The DMV is mandated to provide annual tabulations to the Legislature, comparing the accident and conviction records of course graduates with those of drivers of equivalent age who did not take the course. Legislation is being proposed to amend this requirement by providing a sunset date.

SUPPLEMENTARY INFORMATION:

Driver record statistics on older drivers can be found in Romanowicz and Gebers, Report #126 and Gebers, Romanowicz, and McKenzie, Report #141.

An overview of the entire series of reports was presented by Janke in January 1993 at the *Annual Meeting of the Transportation Research Board* (Transportation Research Record, No. 1438). A paper, by Exuzides & Peck, utilizing a different statistical model was published in the *Proceedings of the Western Users of SAS Software Conference*, Santa Monica, CA, under the title "A Modification of Two Stage Least Squares in Quasi Experiments," 1993, 120-128

TITLE: Evaluation of Mature Driver Improvement Program Home-Study Courses

AUTHOR(S): Eric Berube

DATE: December 1995

FUNDING SOURCE: Departmental Budget

REPORT NUMBER: 157

NTIS NUMBER: PB96-144340

PROJECT OBJECTIVE:

To evaluate the effectiveness of home-study and in-person mature driver improvement courses.

SUMMARY:

This report compares the effectiveness of home-study and in-person courses offered under California's mature driver improvement (MDI) program. The major issue addressed in the report is whether home-study MDI courses are less effective than in-person courses in reducing fatal/injury crashes and total citations. Two secondary issues are (a) the validity of MDI course completion as an indicator of fatal/injury crash risk and (b) whether the MDI courses themselves reduced fatal/injury crash risk. The study results provide little evidence that home-study courses are less effective than in-person courses in reducing fatal/injury crashes and total citations, and no evidence that MDI course graduates are at actuarially lower fatal/injury crash risk than are nonparticipants. In addition, the results indicate that the MDI program may have reduced the rate of traffic violation citations, but not the rate of fatal/injury crashes, among course graduates.

IMPLEMENTATION STATUS OF FINDINGS AND RECOMMENDATIONS:

None.

SUPPLEMENTARY INFORMATION:

See Stylos and Janke, Report 119; Berube and Hagge, Report 125; Foster, Reports 130 and 136; Berube, Report 140; Janke, M. K. (1993), The Mature Driver Program in California, *Transportation Research Record*, 1438, 77-83.

TITLE: Effectiveness of Novice Driver Education

AUTHOR(S): Raymond C. Peck

DATE: 1996

FUNDING SOURCE: Departmental Budget

REPORT NUMBER: Unnumbered

NTIS NUMBER: None

PROJECT OBJECTIVE:

To review and critique the results of the NHTSA-funded driver training experimental evaluation known as the "Dekalb" study.

SUMMARY:

This paper summarizes the original study findings and various reanalysis of the data conducted by other investigators. It is concluded that the introduction of behind-the-wheel training into the Dekalb County high school curriculum did not result in any safety benefits and, in fact, increased teenage accidents by promoting earlier licensure. The paper emphasizes the need to carefully define the appropriate "unit of analyses" in making policy decisions regarding the efficacy of driver training (accident rate per licensed drivers vs. per capita accident rate of eligible population). The paper discusses the considerations involved in choosing an appropriate policy evaluation metric.

IMPLEMENTATION STATUS OF FINDINGS AND RECOMMENDATIONS:

Not applicable.

SUPPLEMENTARY INFORMATION:

This paper was presented at the annual meeting of the Transportation Research Board, January 1996, Washington DC.

TITLE: Evaluation of California's Graduated Driver Licensing Program

AUTHOR(S): Scott V. Masten &
Robert A. Hagge

DATE: May 2003

FUNDING SOURCE: Departmental Budget

REPORT NUMBER: 207

NTIS NUMBER: None

PROJECT OBJECTIVE:

The objective of this project was to evaluate the traffic safety impact of the graduated licensing program enhancements implemented in July 1998.

SUMMARY:

California's 1998 graduated driver licensing program was implemented to reduce the high crash risk of teenage drivers. Monthly per capita crash rates for 15-to-17-year-olds were analyzed using time series analysis. No overall reduction in total crashes or fatal/injury crashes was found immediately following program implementation or beginning 6 months later. The 12-month nighttime restriction was associated with significant sudden-permanent reductions of 0.44% in total crashes and marginally significant 0.45% in nighttime fatal/injury crashes. The 6-month passenger restriction was associated with reductions of 2.52% and 6.43% in total and fatal/injury teen passenger crashes, respectively. The fact that no overall reductions in crashes, and only small reductions in crashes associated with the restrictions, were found is not surprising given findings that teens and parents were either already practicing program requirements prior to implementation, or not fully complying with the program requirements afterwards. The findings provide support for passenger and nighttime restrictions.

IMPLEMENTATION STATUS OF FINDINGS AND RECOMMENDATIONS:

Given the apparent effectiveness of the nighttime and passenger restrictions it was recommended that the program be continued.

SUPPLEMENTARY INFORMATION:

As of this writing the report is being modified for submission to the Journal of Safety Research for publication.